

Saturday Magazine.

N^o 216.

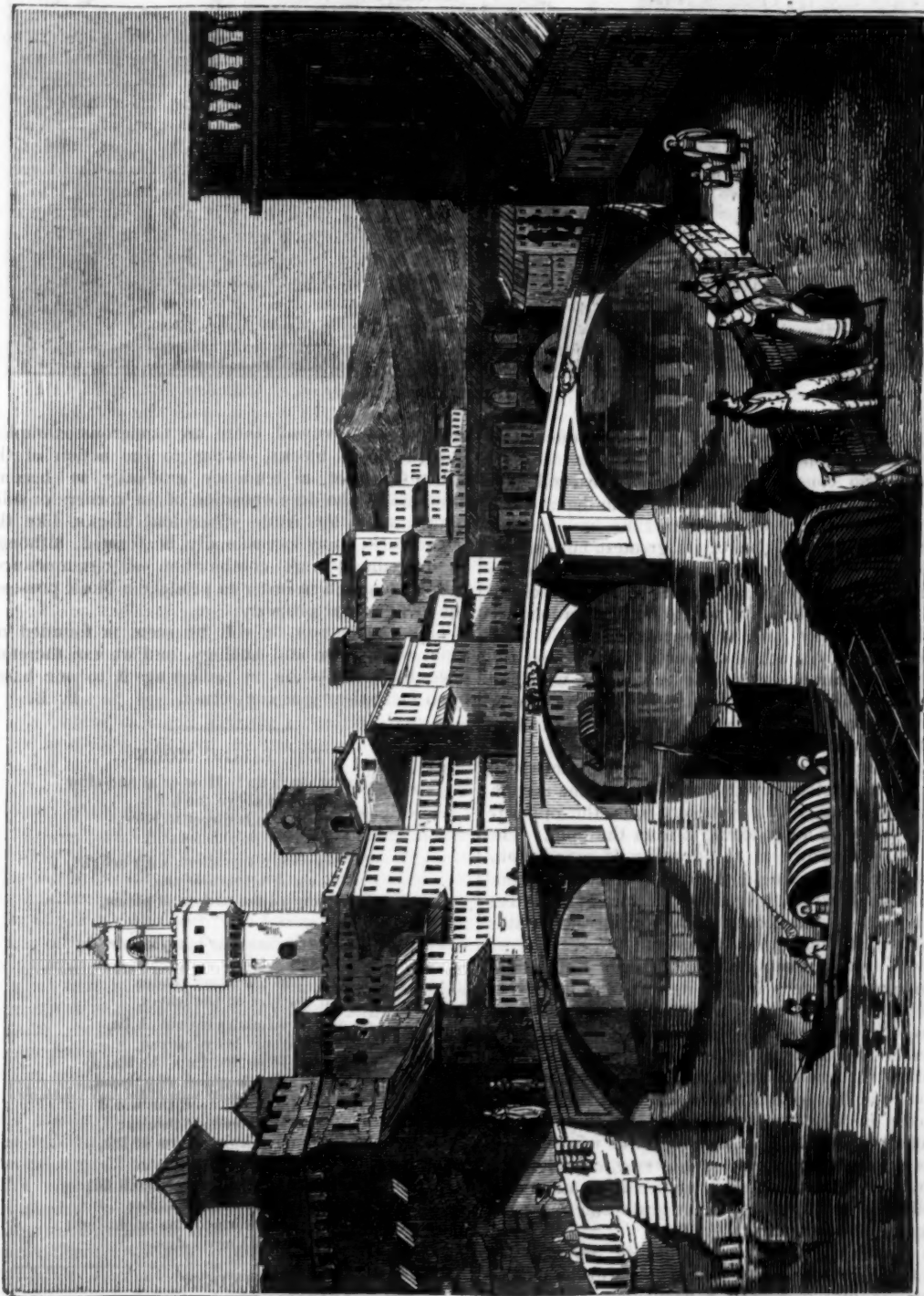
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APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.



FLORENCE.—THE ARNO AND ITS BRIDGES.

THE ARNO AND ITS BRIDGES, IN FLORENCE.

THE Arno is the principal river in the Grand Duchy of Tuscany, and one of the largest and finest in the whole of Italy. It rises in the Appennines, at the distance of about twenty miles in a direct line to the north-east of Florence, and empties itself into that part of the Mediterranean which is called the Tuscan Sea. The direct distance from its source to its mouth is about 80 miles; the length of its actual course is between 140 and 150. Shortly before it reaches the city of Florence, the breadth of this river is about 400 feet: in its course through the city it is confined by embankments, and much diminished,—in some places, indeed, to little more than one-half of that extent. The volume of its waters depends pretty much upon the season of the year; in the Summer they generally shrink into a shallow stream, occupying the centre of its bed, while, in the Winter and Spring, when swollen by rains, or the melting of the mountain snows, they raise their rapid and muddy current almost to a level with the artificial embankments, which have been erected to restrain it along the greater part of its course. This variable character the Arno shares in common with the other rivers descending from the Appennines: their course is so short, that any increase which takes place at their sources, at once affects them throughout the whole of it. When this increase is extraordinary, it is of course accompanied with a corresponding effect, and thus sometimes it causes the stream to rush down with irresistible fury, and inundate the country adjacent to its banks. The Arno has often been subjected to these sudden overflowings; and, on such occasions, the city of Florence and its neighbouring plain have suffered severely. Two of the most famous were those which occurred in 1333 and in 1557; the latter of which occasioned the demolition of the then existing Ponte a Santa Trinità, and so led to the erection of the present structure.

In its course through Florence, the Arno is crossed by four bridges. Of all these, by far the most beautiful is that represented in our engraving. It is called the *Ponte a Santa Trinità* (Bridge of the Holy Trinity); and it has long enjoyed, with justice too, the celebrity of rivalling the finest structures of its kind in Europe. Its singular merit consists in the elegance of its form and proportions, and the lightness as well as strength of its construction; and these qualities have always rendered it an object of admiration, both to the natives of the city which it adorns, and the travellers who visit it but for awhile. Nevertheless, it is only within the last few years, that the world has possessed any accurate delineation of its form, or any exact account of its dimensions; and for this it is indebted to one of our own countrymen, Mr. Lewis Vulliamy. This gentleman, while studying at Florence, as one of the travelling students of the Royal Academy, was much surprised to find that, of the few existing representations of the bridge, not one deserved attention, either for the beauty of its execution or the correctness of its measurement; and, with a laudable zeal for the interests of his art, he at once undertook the troublesome task of supplying the deficiency. To his description we are chiefly indebted for our knowledge of many details concerning it.

The earliest structure which crossed the Arno, on the site of this bridge, was destroyed by a flood in the year 1252; two-and-twenty years afterwards it was rebuilt. In 1346 this second erection was repaired and strengthened under the direction of Taddeo

Gaddi, at an expense of 20,000 golden crowns, having been probably much damaged by the flood of 1333; and thus restored, it remained standing until that of 1557. This latter inundation is described in the following manner by an Italian writer, in his life of Ammanati, the artist by whom the bridge of the Trinity was restored.

"On the 12th of September there came a violent rain, by which the waters of the river were so much increased in a short time, that, overflowing on every side, they began, even at the Casentino, (a long and deep valley not far from its source,) to throw down mills and every sort of building which they encountered, breaking to pieces and demolishing bridges and houses, and destroying many of the inhabitants of the country around. The Sieve, too, receiving from the fulness of the brooks and rivulets a vast quantity of water, inundated, in like manner, all the Val di Mugello, causing a similar desolation, and then joining the Arno, increased the waters of that river to such an extent, that, rushing impetuously into our city about the third hour of the night, at the first blow it levelled the Ponte a Santa Trinità, the ruins of which then impeding the further passage of the stream, caused it so to swell in this part of the river, that, rising above the bank on either side, it flowed over through the whole plain of the city."

The same writer says, that the water brought down with it such a quantity of earth, that it not only filled up caves and grottoes, but deposited itself, to a considerable height, in the rooms on the ground-floor of buildings,—thus causing the waste of immense stores of provisions, and the destruction of many houses. It was a task of some months, and of great expense, to remove this earth: Ammanati used it to strengthen the city walls, by banking them with it on the inside.

At the time of this calamity, the architect whose name was held in the highest repute at Florence was Bartolomeo Ammanati, who had executed several works of great merit in Rome and Venice: he was accordingly the person to whom was principally entrusted the task of restoring the fallen structures, and repairing the damage which the late inundation had occasioned. Among other things, he was charged with the erection of the new Ponte a Santa Trinità, which he commenced in March, 1566, and completed in the spring of 1569. The form and proportions which he proposed for the new bridge were at once original and daring. The principal objects which he had to keep in view, were to obtain great strength in the piers with the least possible obstruction to the stream, to preserve sufficient water-way, and to keep it undiminished at the highest point to which the water would ever rise, and yet not to raise the top of the bridge so high as to make the ascent of the road-way inconveniently steep. To accomplish these objects, he was obliged to use a new form of arch; for the circular one of the Romans would have caused too much interruption to the water, when it rose above the point at which the curve commenced, the point of "springing," as it is technically called; and the Gothic arch was of too high a proportion, and would have elevated the roadway too much. That which he employed consisted of two portions of a very flat ellipse, its rise in the centre being not much more than one-seventh of the whole span. From the circumstance of this being an arch of Ammanati's own invention, it is remarked as extraordinary, that no drawing or description of it by himself should be known to exist, especially as the arch must have been drawn to the size of the original on some level surface of considerable extent, to afford the necessary guide for the execution of the centering. It is

said, indeed, that there was such a line traced on the floor of the Medicean Theatre, or Hall of the Thirteenth Magistrates.

The exterior of the bridge is of marble; its parapet is solid, and has at its four extremities as many pedestals, bearing allegorical statues of the four Seasons. The centre of each arch, or the key-stone, as it is technically called, is decorated with a piece of sculpture; this, in the middle arch, is in the form of a ram's head, with a scroll, and a label above it bearing the zodiacal sign of Capricorn; and on each of the side arches is simply an enriched console, with a scroll and an inscription. There are, consequently, four inscriptions,—one on each face of the two side arches: they are all to the same effect, though couched in slightly different language, intimating respectively that "Cosmo de Medicis, Grand Duke of Etruria, restored its beauty to the city, (which had been deformed by the overthrow of the bridge,) in the year 1569;" that he "restored the bridge, (which had been overthrown by the violence of the stream,) in an improved form," in that year; that he "replaced the bridge over the Arno (which it had thrown down,) in the same year;" and that "Cosmo de Medicis the Second, by restoring the bridge, added to the ornament of the city, and the convenience of the citizens," in 1569. According to Mr. Vulliamy, these ornaments were evidently intended to conceal the interruption occasioned by the intersection of the two curves which form the arch. "If, however," he says, "there be any visual defects at these points, the general appearance does not suffer; for nothing can be more graceful or produce a happier effect than the lightness of the arches, contrasted with the massiveness of the piers and their cutwaters. This most judicious union of lightness and strength seems admirably contrived to answer its end; for the waters of the Arno being often suddenly swollen, rise several feet in a short space of time, and rush down with fearful impetuosity. Against the violence of the flood, the size and weight of the piers, the great length from point to point of the cutwaters, and the acuteness of the angle presented to the stream, offer an effectual resistance, while the height of the piers before the arches commence, leaves the passage for the water undiminished at its greatest elevation."

Most of our information upon the subject of this bridge is derived from a curious little document preserved at Florence, in the shape of a little memorandum or pocket-book on vellum, which belonged to Alfonso and Giulio Parigi, the assistant engineers or superintendents of the workmen, who set down in it many of the principal circumstances attending the progress of the work.

"It was formerly believed," says Mr. Roscoe, "that the bridge was unequal to the support of any great weight, and on this account carriages were not suffered at one time to pass over it; but the French, on obtaining possession of Florence, taught the citizens to be less careful of their bridge, and it was thence discovered that there was little or no reason to suspect its solidity." They are said to have done this by causing their heavy artillery to pass over the bridge. Whether the story be true or not, as Mr. Vulliamy remarks, it is certain that carriages now pass over this as over the other bridges; and, from the width of the bridge and the raised footways, it is evident that this was originally intended.

The bridge seen in our engraving, immediately above the Ponte a Santa Trinità, is the Ponte Vecchio, which was built in the year 1245, under the superintendence of Taddeo Gaddi, upon the ruins of an older structure which had been destroyed twelve

years before by a flood. It was on this site that the first bridge ever built in Florence was erected; indeed, the name of Ponte Vecchio, or "Old Bridge," sufficiently denotes its antiquity. The Florentines say that the original structure certainly existed in the time of the Romans; and some even carry it back to the age of their predecessors, the Etruscans. The present bridge is curious, as having houses built upon either side of its roadway. According to the favourite fashion which prevailed in olden times, and of which our own metropolis afforded a specimen in London-Bridge, from the beginning of the thirteenth to the middle of the eighteenth century, low buildings are erected on both its parapets, but are discontinued in the centre of one side, and their place supplied by three tall Gothic arcades, which fill up the intermediate space. This arrangement is said to produce a happier effect than that which was to be found in our own city. The stranger passes on, and it is not till he arrives at the open arcade which occupies the centre of the bridge, that he discovers his situation, "when all the picturesque magnificence with which the banks of the Arno are dressed breaks in at once upon his view." There is said to be a private passage leading across this bridge from the Palazzo Pitti*, the present residence of the Grand Duke, situated on the south side of the river, to the gallery which stands on the north bank.

Till the beginning of the thirteenth century, the Ponte Vecchio was the only bridge in Florence which crossed the Arno; the increasing population of the city then called for a more ready and extended communication between its different quarters. The Ponte alla Carraia, or the "New Bridge," as it was also called, in contradistinction to the Ponte Vecchio, or Old Bridge, was accordingly built. It was commenced in 1218, and finished two years afterwards, under the direction, as is generally supposed, of the father of Arnolfo di Lapo, so celebrated as the architect of the Cathedral of Florence. But this structure lasted only a short time: in the year 1269 it was destroyed by one of the floods of the Arno, and in the following year replaced by a new one. On this, as well as on the former occasion, the foundations alone were of stone; the rest of the bridge was formed of the less expensive, but also less durable material, wood, strengthened with iron. This second structure was scarcely so lasting as the first; for, on the 1st of May, in the year 1304, during the celebration of the festival which welcomed the arrival of the Cardinal da Prato, on a mission for terminating the war in which Florence was then involved, the bridge was so crowded with people that it broke down in many places, causing many persons to perish by a miserable death. It was afterwards repaired, and then again wholly destroyed in 1333, during the famous inundation which then happened; in the same year, however, it was restored at a great expense. After the lapse of 224 years, it was once more completely demolished by the equally famous flood which happened, as we have described, in 1557, and caused at the same time the destruction of the Bridge of the Trinity; and again, in the same year, it was rebuilt by the order of the Grand Duke Cosmo, under the direction of Ammanati.

* See *Saturday Magazine*, Vol. IV., p. 2.

DISTINCTION of rank is highly necessary for the economy of the world, and was never called in question but by barbarians and enthusiasts.—*Rowe*.

MEN are so employed about themselves, that they have not leisure to distinguish and penetrate into others; which is the cause why a great merit, joined to a great modesty, may be a long time before it is discovered.—*LA BRUYERE*.

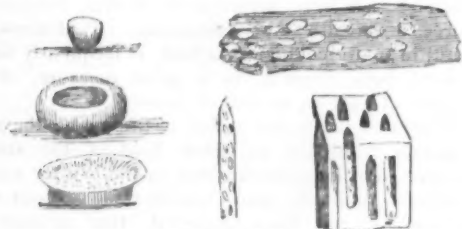
MICROSCOPIC VEGETATION.

FUNGI AND MOSSES.

WE have already* noticed some of the peculiarities of this order of Cryptogamic plants, together with a few of their useful and noxious qualities. With the assistance of the microscope we are enabled to observe the peculiar structure of these singular productions, and to notice the economy of the more minute species.

The smaller species of Fungi could never have been properly understood without the aid of the microscope, and, before the invention of that instrument, the appearance they presented when in collected masses was described by the terms canker, mouldiness, &c., terms which conveyed no definite meaning. These minute fungi are constantly found on decaying vegetable and animal substances, or covering the damp walls of cellars and caves, and flourishing in those places which are unfit for the support of the more perfect vegetables. The diseases to which corn and many kinds of grass are subject, have their origin in different species of these parasitic plants.

The immense number of species already discovered, and the singular forms they assume, together with the various modes in which they are propagated, renders this order of vegetable productions an endless source of delightful observation to the inquiring mind. We have selected one of the most common species to illustrate this subject, the *Common Ascobolus*; it is met with throughout the whole year. This fungus is of a greenish colour, and varies in form according to its age. At first it is a globular substance, about the size of a pin's head; as it increases in age it gradually opens, and forms a kind of cup; at length its upper surface becomes perfectly flat, with the exception of a raised margin; at this period of its growth, the vessels which contain the seeds may be seen like so many minute black specks. One of these vessels, highly magnified, is shown in the engraving: it con-

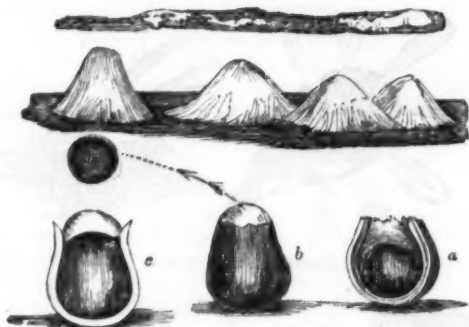


COMMON ASCOBOLUS.

tains eight oval seeds or *sporidia*; but the most singular part of the history of this plant, is the manner in which these seeds are distributed: the seed-vessel, as we have already said, appears at first like a minute black point; this gradually rises from the surface of the fungus, until, when the seeds are ripe, it suddenly bursts and distributes its contents over the ground.

The next engraving represents the *Star-like Sphaerobolus*; it is not common, but is found occasionally on rotten wood, &c. The natural appearance of the plant is shown in the upper figure. The figure immediately beneath shows four young specimens, much magnified: at this time they are covered with a kind of white down; from this, however, they gradually emerge as they become mature. The seed-vessel in this species is in the form of a small ball, and is contained within the body of the plant. Fig. *a* represents one of these fungi cut in half, so as to show the situation of the seed-vessel. The substance of the plant itself, it will be seen, is formed of several layers, or *laminae*. As soon as the seed is mature, the upper

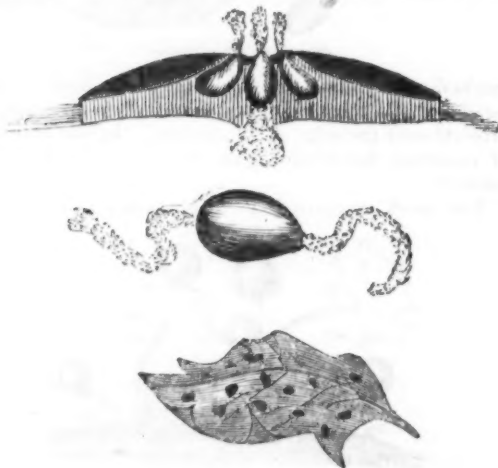
* See *Saturday Magazine*, Vol. VI., p. 236.



STAR-LIKE SPHEROBOLUS.

part of the fungus splits into from five to seven equal portions, leaving the seed-vessel exposed to the air. It is now that a curious provision of nature for the dispersion of the seed comes into action: the inner lining on which the seed-vessel rests, is suddenly, with a jerk, turned inside out, and the little ball is thrown to a considerable distance (fig. *b*), leaving the parent plant empty, and its inner lining inverted, and forming a dome-like top to the fungus (fig. *c*). It is wonderful that so great a degree of power should exist in a substance not larger than the head of a pin, since not only is it necessary that the ball of seed should be thrown to some distance, but it has also to overcome a resistance at the opening, which is smaller than the diameter of the ball.

The large shining *Cecithospora* is found on the dead leaves of the holly, and is rather common at all times of the year: it appears like so many black spots

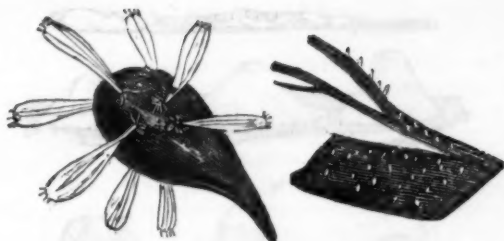


LARGE SHINING CECITHOSPORA.

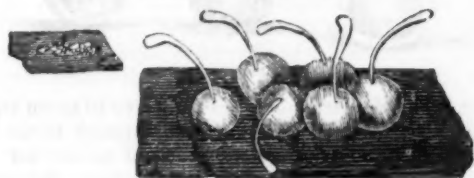
about the size of a very small pin's head. When magnified, its structure is very curious: the upper figure in the engraving is a section of one of these plants; it contains three seed-vessels, but in some plants the number amounts to five. The seeds, when ripe, are discharged in a stream from one end of these vessels; sometimes, as shown in the lower figure, the seed escapes from both ends of the pods.

The minute parasitic *Stilbum* has been found as the parasite upon a parasite, obtaining its nourishment from another species of fungus, which, in its turn, obtained its nutriment from the rotten wood on which it was growing. The seeds in this species are dispersed immediately from the rounded head of the plant itself.

The least *Esaria* is another parasitic fungus, growing upon a plant of its own order; it has been gathered in damp places in woods, in the spring.



MINUTE PARASITIC STYLIDUM.



LEAFY ISARIA.

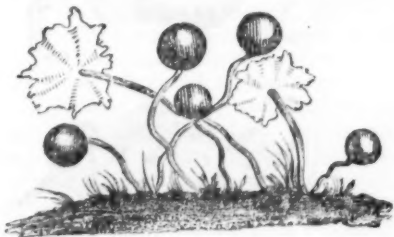
The *Sycamore petiol* *Peziza* was found on the leaf-stalk of the sycamore. In dry weather nothing is perceptible but oblong or elliptical black spots. In moist weather the plant makes its appearance by



SYCAMORE PETIOL PEZIZA.

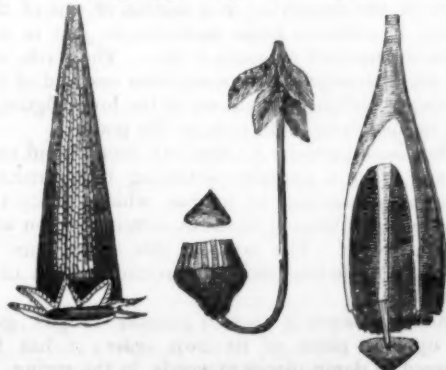
gradually distending the small slit in the bark of the petiol, till it attains its round form, when the margin projects over the edge of the fissure. In the absence of moisture, the whole again contracts and becomes invisible.

The next engraving is a magnified view of a



species of fungus, which formed the mouldiness on an old shoe.

The following engravings are magnified views of



SEED RECEPTACLES IN MOSSES.

the receptacles for the seed in several species of mosses; these, in many cases, are very interesting objects for the microscope, and require a glass of very moderate power.

The Mosses, the third order of Cryptogamous plants, although extremely minute, and not to be found in any vast abundance, are still well worthy of notice, on account of the uses to which we know they can be applied, and in order to discover, if possible, others with which we are at present unacquainted.

It is well observed by a writer in the *Edinburgh Encyclopædia*, that "we are informed, by the inspired historian of the Creation, that *God pronounced good every thing which he had made*; and surely nothing that the Deity has pronounced good, can be unworthy of the contemplation of man. Every research into Nature, when properly conducted, must be like Galen's Treatise on Anatomy, a hymn to that Great Being by whom all things were at first formed, and are still upheld." "He who could examine the nutrition, the growth, the regular conformation, the provision made for the continuation of the species, while all the individuals successively disappear, of even the minutest moss without perceiving in them the proofs of intelligence, power, and goodness, would probably receive no more conviction from the sublimer truths that astronomy itself could unfold."

The mere examination of the structure of mosses would not be useless, in this point of view, even supposing we could discover no useful properties in these minute vegetables, in reference to man, or any of the lower animals. But purposes of utility which have been answered by mosses, have not escaped observation. Many species of this class which inhabit the water, are of essential service in keeping it pure and wholesome; and, in the lapse of time, their remains contribute, in no mean degree, to the formation of vegetable earth, by which quagmires are ultimately turned into fertile fields, and those spots of ground which were injurious to health, become the source of wealth and abundance. Peat-moss, so useful in many countries as fuel, is frequently found to have been formed, in a great measure, of the remains of various species of mosses.

Mosses at times are useful in protecting the roots of plants from the too great heat of the sun in Summer, and from severe frost in the Winter season.

Several animals find considerable resource in mosses. It has been observed, that against the approaches of Winter, the arctic bear lines his cave well with a species of moss, (*Polytrichum commune*.) The squirrel's round and elegant pendulous nest, which serves not less as a comfortable retreat from the Winter's blast, than as a warm and safe habitation for the young, is chiefly formed of mosses. Many birds also build their nests almost entirely of mosses, and numerous tribes of insects find among these vegetable productions a safe retreat, and frequently subsist upon their delicate leaves.

In Lapland, during the Summer, a bed of moss is as much prized as a heather-bed by the highlanders of Scotland. The Laplanders also employ it as a substitute for bed-clothes in the cradles of their infants. In some places in England, where the *Polytrichum commune* grows luxuriantly, it is made into brooms. Mosses have also, to a trifling extent, been used in dying, and in former days great medicinal virtues were attributed to them.

THERE is nothing easier, than to persuade men well of themselves; when a man's self-love meets with another's flattery, it is an high praise that will not be believed.—

BISHOP HALE.

THE TRADE-WINDS.

IN illustration of the adaptation of the trade-winds to the purposes of commerce, a more striking instance, perhaps, could not be adduced than the following, which is given in a volume entitled *Four Years' Residence in the West Indies*, written by a gentleman of the name of Bayley. In the description of the island of St. Vincent, it is there stated that a little sloop, the private signal of which was unknown to any of the merchants, sailed into the harbour one morning, and immediately attracted the notice of the surrounding crowd; and the history of its unexpected appearance is thus given:—

"Every one has heard of the little fishing-smacks employed in cruising along the coast of Scotland; which carry herrings and other fish to Leith, Edinburgh, or Glasgow, worked by three or four hardy sailors, and generally commanded by an individual having no other knowledge of navigation than that which enables him to keep his dead reckoning, and to take the sun with his quadrant at noon-day.

"It appears that a man who owned and commanded one of these coasting vessels, had been in the habit of seeing the West India ships load and unload in the several ports of Scotland; and having heard that sugar was a very profitable cargo, he determined, by way of speculation, on making a trip to St. Vincent, and returning to the Scottish market with a few hogsheads of that commodity. The natives were perfectly astonished: they had never heard of such a feat before; and they deemed it quite impossible that a mere fishing-smack, worked by only four men, and commanded by an ignorant master, should plough the boisterous billows of the Atlantic, and reach the West Indies in safety: yet so it was. The hardy Scotchman freighted his vessel, made sail, crossed the Bay of Biscay in a gale, got into the *trades*, and scudded along before the wind at the rate of seven knots an hour, trusting to his dead reckoning all the way. He spoke no vessel during the whole voyage, and never once saw land until the morning of the thirty-fifth day, when he descried St. Vincent's right a-head; and setting his gaff-top-sail, he ran down, under a light breeze, along the windward coast of the island, and came to anchor about eleven o'clock, under the circumstances before mentioned."

Such a vessel, and so manned, could hardly have performed the voyage here described, had it not been aided by the current of the trade-winds: and what then must be the advantages of such a wind, when, instead of aiding the puny enterprise of a single and obscure individual, it forwards the annual fleets of mighty nations?

But, if we would view the subject in all its magnitude, let us contemplate with a philosophic eye, the haven of any one of the larger seaports of Europe; filled with vessels from every maritime nation of the world; freighted not only with everything which the natural wants of man demand, or which the state of society has rendered necessary to his comfort, but with all which the most refined luxury has been able to suggest. "Merchandise of gold and silver, and precious stones, and of pearls, and fine linen and purple, and silk and scarlet, and all fine wood, and all manner of vessels of ivory, and all manner of vessels of most precious wood, and of brass and iron, and marble, and cinnamon, and odours and ointments, and frankincense, and wine and oil, and fine flour and wheat, and beasts and sheep, and horses and chariots."

[Kidd's *Bridgewater Treatise*.]

HUMILITY is the low but broad and deep foundation of every Christian virtue.—BURKE.

MILES COVERDALE,

BISHOP OF EXETER.

THE name of COVERDALE has of late been so frequently brought to the notice of our readers, as the person who produced the first entire translation of the Protestant Bible in the English language, that we are glad to give some account of him in the pages of the *Saturday Magazine*.

Miles Coverdale was born in Yorkshire in 1487. His early life corresponded little with his subsequent career; for he not only studied in a monastery at Cambridge, but became a monk of the order of St. Augustine. It is probable, however, that under Dr. Barnes, his prior, who afterwards suffered martyrdom for the Protestant faith, Coverdale then laid a broad and deep foundation in Scripture reading, and acquired a large portion of that learning which, at the proper time, he brought to bear with full effect on the great question of the Reformation. In 1514, he was ordained at Norwich; and the University of Tubingen, in Suabia, having conferred upon him the degree of doctor of divinity, he, with some other divines of Cambridge, avowed his departure from the Romish church, and his conversion to Protestantism. This important step appears to have been taken about the year 1530, when there was a strong effort made, especially at the two Universities, to restore the Church of England to its original purity.

In Germany he met with William Tindal, a good Hebrew scholar, and a learned and pious man, who had led the way among the English translators of the Scriptures,—having translated from the original Greek, and published the New Testament in 1526. With Coverdale's assistance he also translated and edited the Five Books of Moses. Tindal, whose life, however useful to others, seems to have been one of "labour and sorrow," was imprisoned through the influence of King Henry the Eighth, and by virtue of a decree made in the assembly at Augsburg, brought to execution in 1536. He was first strangled, and then burnt, his last words being—"Lord, open the King of England's eyes!"—a prayer, the object of which was speedily fulfilled, in the support which Henry afterwards gave to the cause of truth. It is remarkable, too, that Coverdale, in the dedication of his Volume of the Scriptures to Henry, honestly tells his Majesty, "that the Pope gave him the title of *Defender of the Faith* only because his Highness suffered his bishops to burne God's word, the root of faith, and to persecute the lovers and ministers of it;" but, at the same time, he intimates his conviction that this title of *Defender of the Faith* will prove a prophecy; that, "by the righteous administration of his Grace, the faith *shall* be so defended, that God's word, the mother of faith, should have its free course thorow all Christendome, but especially in his Grace's realme."

The joint exertions of these two excellent men having been thus interrupted by the violent death of one of them, the zealous and intrepid Coverdale followed up, with increased energy, the object, in the pursuit of which his friend had fallen a sacrifice. Eager to supply the people of England with the spiritual food which had been too long kept out of their reach, their appetite for it having been sharpened by the detached portions of Scripture which they had already seen in their native tongue, he set himself to the great work of publishing the whole of the *Sacred Canon in English*, and declaring himself as ready to serve the interests of Religion "in one translation as in another," the one which he presented to his countrymen, and the third centenary of the publication of which we celebrated on the 4th of October last, was, according

to his own title, made from the Latin and German. Coverdale, however, called his version a "special" translation, because it was different from the former English translations. "Its noble simplicity, perspicuity, and purity of style," says the Rev. Thomas Hartwell Horne, in the *Protestant Memorial*, "are truly astonishing. It is divided into six tomes or parts, adorned with wood-cuts, and furnished with Scripture references in the margin. The last page has these words,— 'Prynted in the year of our Lorde M.D.XXXV., and fynished the fourth daye of October.' It is in folio, and, from the appearance of the types, is generally considered to have been printed at Zürich, in the printing-office of Christopher Froshover. The following is the title-page of this extremely rare and curious volume:—

'Biblia. The Bible, that is, the holy Scripture of the Olde and New Testament, faithfully and truly translated out of the Douche and Latyn into Englishe, M.D.XXXV.'

Of this Bible there was another edition in large 4to., 1550, which was republished, with a new title, 1553; and these, according to Lewis, were all the editions of it which were ever put forth. (*Lewis's History of English Translations of the Bible.*)

Coverdale, during the unsettled state of Religion in this country, spent much of his time in labours abroad; and we find him, in 1538, involved in a troublesome affair connected with the object which was so dear to his heart. Grafton, the famous printer, had been allowed by Francis the First, king of France, at the request of our Henry, to print a Bible at Paris, on account of the superior skill of the workmen there, and the goodness and cheapness of the paper. But, notwithstanding the royal license, the Church of Rome interfered. The Inquisitors issued their order, and the French printers, their English employers, and the corrector of the press, who was Miles Coverdale himself, were summoned before the Inquisition. They condemned the whole impression of 2500 copies of the Bible, as *heretical volumes*, to the flames! Thus, with the same spirit in which the Scriptures, circulated by Protestants, were of late shockingly branded by one of the popes* as "*deadly pastures*," did the Romanists treat the lively oracles of truth, the richest inheritance of Protestantism. Some copies were, however, secretly sold to a haberdasher to wrap his goods in, and were thus saved from the general destruction. Not only were these copies, but the presses and types, as well as the printers, afterwards brought to London; a most valuable importation, which enabled Grafton and Whitchurch to print, in 1539 and 1540, under Coverdale's direction, what is called "*Cranmer's*," or "*the Great Bible*." Of Cranmer's Bible we have a specimen in that translation of the Psalms of David which is adopted in our Common Prayer-books.

The principal feature in the life of Coverdale, for which his name stands prominently forward, having been stated, little remains to be told concerning him: but that little is enough to show, that the return for all his goodness to his fellow-creatures was not *here*, though, doubtless, he failed not of that solid and permanent "*recompense of reward*" to which his hopes were directed. As almoner to Queen Catherine Parr, Henry's last wife, he preached her funeral sermon in the chapel of Sudeley Castle, Gloucestershire, in 1548, and then, as well as on other occasions, when appointed to preach at Paul's Cross, defended the true Religion against the contrary creed. In 1551, good King Edward the Sixth made him Bishop of Exeter,

on account of his extraordinary knowledge in divinity, and his unblemished character. On this office he entered very poor. In his diocese he endeavoured to promote Religion by frequently preaching in the churches at Exeter; and he became eminent for his hospitality, which he exercised to the extent of his means; for his constant kindness to the poor; and, more than all, for his unaffected humility of deportment and character.

Queen Mary's accession to the throne of these realms was the signal for restoring Popery, whose violence towards its opponents, increased by its recent defeat, was immediately set at work by that principle which remains unchanged to this day; as evinced by the system of persecution which is too often carried on by the Romanists, where they have it in their power, against those whom they choose to call heretics. Coverdale was driven from his see, and thrown into prison: his life, indeed, was spared, owing to his connexion by marriage with the chaplain of the King of Denmark, who interceded for him; but, after two years' confinement, he was, by way of special favour, allowed to go into exile. At Geneva, whither he retired, he united with some other English refugees in producing, in 1560, the "*Geneva Bible*," the notes to which savour of the opinions of Calvin; and when recalled to England in the happier days of Elizabeth, Coverdale was found, in his utter departure from Popery, to have adopted views approved by the German reformers, but not sanctioned by the Church of England; which prevented him from resuming his episcopal functions, and, indeed, for some time, from engaging in any ministerial duty. At length, Dr. Grindal, Bishop of London, who had a sincere regard for "*Father Coverdale*," and bore in mind all that he had done so readily and so disinterestedly for the interests of Religion, before some others, afterwards perhaps more eminent, had stirred themselves, procured for him an offer of the bishopric of Llandaff. Some conscientious reasons, partly, perhaps, arising from the bodily infirmities attendant on old age, induced him to decline the responsible situation of a bishop. Upon this, Grindal gave him the living of St. Magnus the Martyr, near London Bridge, the first-fruits of which, however, he was too poor to be enabled to pay. Indeed, from the time of his ejection from the see of Exeter, his life was a continual struggle against poverty. The Queen excused him the payment of the first-fruits; but, notwithstanding, he soon gave up his living, though he continued to officiate in the church.

He died in February, 1568, aged 81, and was buried in the Church of St. Bartholomew, by the Royal Exchange, as appears by the register, which is in existence. The present church was built by Sir Christopher Wren, in 1679, on the site of the old one; but Stow, in describing the ancient structure, records a certain Latin inscription, which, without any comment on the deceased, he tells us "*is on a fair plated stone, on the ground in the chancel*." This memorial is interesting, as showing the estimation in which the great and good man who is the subject of it was held at the period of his death. The following is a translation:—

EPITAPH on the Right Reverend Father in God,
MILES COVERDALE, an Octogenarian.

This tomb, which at last offers repose, and a termination of his labours, holds the bones of Coverdale!

Who, as Bishop of Exeter, distinguished himself by the exemplary probity of his life.

He lived to the good old age of Eighty-one,

Too long an innocent exile from his native country.

After undergoing a variety of troubles,

He is here received into the friendly bosom of the grave.

* Leo the Twelfth, in the bull for his Romish Jubilee in 1825.

THE USEFUL ARTS. No. XIII.

BEFORE entering into any details respecting some of the various species of Animals used for food, we shall make a few remarks on the modes in which all kinds of food are prepared for eating by

COOKING.

ANIMAL, as well as vegetable matter, requires to be prepared by the action of heat, to render it fit for wholesome food: the solid parts are made tender, and consequently more readily soluble, or digestible, in the stomach. Some of the water which is contained in all animal matter, and which constitutes a large portion of the bulk of all vegetable matter, is evaporated by heat; that bulk is therefore reduced without any diminution of the nutritive portion. In vegetables, also, many noxious chemical principles, which would render the plant poisonous, if it were eaten raw, are dissipated by heat, and the food thus rendered innocent. These are the principal effects of cooking, which are common both to animal and vegetable food; but the changes which the former undergoes, in consequence of the application of heat, are more numerous and complicated.

The constituent principles of all organic matter, and on the presence of which in different proportions, the nutritive qualities of that matter depend, are fibrin, albumen, gelatine, oil, gluten, fecula, or starch, mucilage, sugar, acids, &c. All these principles are modified by the application of heat; some are rendered more digestible, others less so: these changes are also dependent on the mode in which the heat is applied.

When it is considered, that we are utterly ignorant of the mode of chemical action of the stomach, and of all that relates to the primary functions of digestion and assimilation, it is clear, that it is by experience alone we can obtain any knowledge of the relative nutritive qualities of different kinds of food, and of the mode in which it should be prepared. This question is still further complicated by the reciprocal action of the mind and body, in all that relates to feeding. It is well ascertained, that more benefit is derived from a food which is agreeable in its taste, and which affords a gratification to that sense, than from one of an opposite quality, though, perhaps, containing more of those principles which are considered as highly nutritive.

There are three or four different modes in which heat is applied to cook food, on each of which we shall make some remarks.

Boiling in water is, generally speaking, the most effectual. Every part of the substance is equally subjected to the heat, owing to the uniform temperature of the liquid; the fibrin of meat is loosened, or softened; and to do this most completely, the water ought not to boil fast, or, properly speaking, ought not to *boil* at all: the meat should be put into it when cold, since it is by long soaking in the liquid that the desired effect is produced.

One objection against boiling, as applied to meat, might be obviated by economy, which is utterly neglected in England, in cookery of all species: this objection is, that a large proportion of the nutritive parts are dissolved in the water and lost; but if we made the same use of the water in which meat is boiled, that our neighbours the French do,—that is, if we prepared from it a thin *soup*, by adding vegetables and condiments, or by an additional quantity of meat of an inferior quality, for the purpose of yielding more gelatine and oil to the liquid,—this objection would be removed, and no loss incurred. The meat made tender by cooking would contain the fibrin, gluten, albumen, and other insoluble principles, while the fat or oil, and the soluble matter, would be retained in the soup.

It should be mentioned here, that no food should contain nutritive matter in too concentrated a form: it has been found that no animal will thrive, if fed on that principle in a condensed or concentrated state, which enters most largely into its natural diet. Fat, or animal oil, is more nutritious than perhaps any other animal matter, but it would be impossible to feed solely on it; and meat, though containing several other principles, is too nutritious to be a wholesome food, when consumed without some vegetable matter to dilute it, as it were. Concentrated nutritive matter is not so digestible as when it is mixed up with that which is less so, or which is even not at all so. It is for this reason, that rich dishes disagree with healthy persons: a larger portion of nutritive matter is thrown into the stomach than it can readily convert into *chyme*, and the functions are, in consequence, deranged. A certain degree of solidity in the food is also requisite to healthy digestion:

hence jelly, which consists of gelatine in a condensed form is not so wholesome as the same quantity of gelatine would have been diffused through the fibrin of meat: and strong soups, containing such gelatine in abundance, are objectionable on the same grounds.

Roasting and *boiling* possess several advantages: the direct action of the fire, by hardening the outside of the meat, prevents the escape of the juices and more volatile parts, while the fibre is made equally tender; and the meat is by this mode of cookery rendered more palatable, as having more flavour; it is also more nutritive, owing to the retention of those principles, which by boiling are dispersed in the water. But the loss of weight by roasting is greater than by boiling. Mutton, by the latter mode of cooking, loses about one-fifth—beef one-fourth—while by roasting, they lose nearly one-third of their weight. A great deal of this loss is, undoubtedly, to be attributed to the evaporation of the water contained in the meat, which is rather increased than diminished by boiling. The principal objection against roasting is, that the fat of the meat is burnt, and of all animal poisons, none is much more injurious than burnt or *emphyreumatized* oil; hence, meat abounding in fat ought always to be boiled.

Baking partakes of the advantages and defects of both the former modes of cookery; there is less waste, owing to the confinement in a closed space, which prevents the escape of the volatile matter; but the oil being confined, and also emphyreumatized, renders baking liable to the same objection as roasting.

Economy of fuel is one great recommendation of this mode of preparing food: the poor man gets his dinner well cooked, for a sum which would not supply him with coals enough to warm it, much less to roast or boil it properly: this advantage, however, is necessarily confined to towns, where one oven may be employed to bake the dinners of numerous families.

It is well ascertained that, generally speaking, mutton is the most wholesome of all animal food: owing to some strange associations, or to some wrong use of words, there exists very erroneous opinions on this subject. Most persons not acquainted with physiology, imagine that the flesh of young animals, or of birds, is more *delicate* than that of grown sheep and oxen; and will hence recommend an invalid, or a convalescent, with his digestive powers enfeebled by disease, to “try a bit of boiled veal, or a chicken, or a rabbit, or, perhaps, advise a little soup or jelly, &c.” Now it is certain that, in ninety-nine cases out of a hundred, a slice of boiled leg of mutton, or a broiled mutton chop, would be infinitely preferable to any or all of these, as being far more digestible. The term *delicate* is totally inappropriate to food of any kind: if it be used instead of *tender*, then all meat advanced a small stage towards putrefaction is more tender than when quite fresh, and is really more wholesome. If by “*delicate*,” *digestible* is meant,—that is, the food which is soonest converted into chyme, and assimilated to the corporeal substance of the eater, then a mutton chop and bread will prove a much more delicate breakfast than buttered toast, muffins, hot rolls, and chocolate.

THE more we extend our knowledge of the operations of creative power, as manifested in the structure and economy of organized beings, the better we become qualified to appreciate the *intentions* with which the several arrangements and constructions have been devised, the *art* with which they have been accomplished, and the grand comprehensive plan of which they form a part. By knowing the general tendencies of analogous formations, we can sometimes recognise *designs* that are but faintly indicated, and trace the links which connect them with more general laws. By rendering ourselves familiar with the hand-writing, where the characters are clearly legible, we gradually learn to decypher the more obscure passages, and are enabled to follow the continuity of the narrative through chapters that would otherwise appear mutilated and defaced. Hence the utility of comprehending in our studies the whole range of the organised creation, with a view to the discovery of final causes, and obtaining adequate ideas of the power, the wisdom, and the goodness of God.—ROGER'S *Bridgewater Treatise*.

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